

PRELIMINARY SURVEY OF  
SYLVANIA-CORNING NUCLEAR CORPORATION  
METALLURGICAL LABORATORY  
BAYSIDE, NEW YORK

Work performed  
by the  
Health and Safety Research Division  
Oak Ridge National Laboratory  
Oak Ridge, Tennessee 37830

March 1980

OAK RIDGE NATIONAL LABORATORY  
operated by  
UNION CARBIDE CORPORATION  
for the  
DEPARTMENT OF ENERGY  
as part of the  
Formerly Utilized Sites--  
Remedial Action Program

SYLVANIA-CORNING NUCLEAR CORPORATION  
METALLURGICAL LABORATORY  
BAYSIDE, NEW YORK

At the request of the Department of Energy (DOE), a preliminary survey was performed at the former Sylvania-Corning Nuclear Corporation in Bayside, New York (see Fig. 1), on November 29, 1977, to assess the radiological status of those facilities utilized under Atomic Energy Commission (AEC) contract during the 1950s. This property is currently utilized by the National Bank of North America. Sidney Klotz, Assistant Vice President, National Bank of North America, provided information about the site and arranged for approval of the preliminary survey of the site. From information currently available, contract work was performed by Sylvania-Corning Nuclear Corporation at the Bayside Metallurgical Laboratory located at this site. Work apparently involved uranium pipe cutting using an abrasive cutoff technique and the production of  $UO_2$  wafers using a pulverization and pressing technique. There are also indications that a later project involved work with thorium.

#### Present Use of Facilities

The site on which the laboratory was located was estimated to be about 28 acres and is currently owned by the National Bank of North America. All facilities, except for a garage and boiler house (see Figs. 2, 3, and 4), have been demolished. Presently, the site is not being used. No information is currently available as to the radiological status of the facilities when the project terminated or to the present location of structural materials or equipment associated with the project.

#### Results of Preliminary Survey

The preliminary survey was conducted by H. W. Dickson of the Oak Ridge National Laboratory and W. T. Thornton of the DOE/Oak Ridge Operations Office. A survey of the area was performed which consisted of gamma-ray exposure rate measurements made at a height of 1 m above the surface and beta-gamma dose-rate measurements 1 cm above the surface. Additionally, two soil samples were obtained from the site (see Fig. 5).

External gamma exposure rate ranged from 6 to 8  $\mu\text{R/hr}$  (1-m height) at all locations surveyed on site. Open-window Geiger-Mueller survey meter readings at 1 cm above the ground were approximately 0.03 to 0.05 mrad/hr. Two surface soil samples were obtained at this site. The locations of these two samples are shown in Fig. 5, and radionuclide concentrations are listed in Table 1.

All radiation measurements taken during this survey were within typical background levels for this region in New York. Some effort should be made to determine the present location of equipment and building rubble. Also, operational records should be sought to determine whether any waste material was disposed on the site.

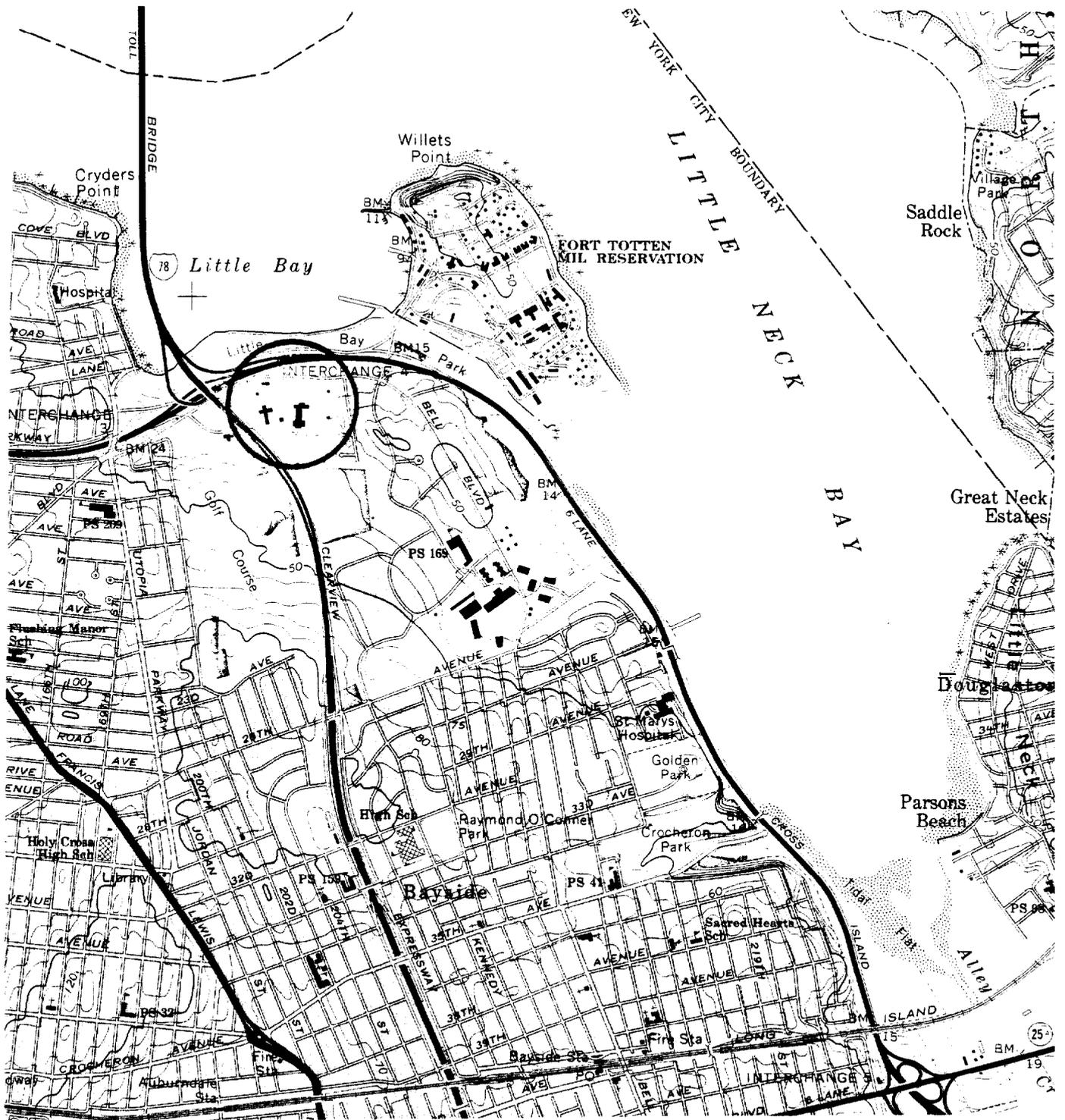
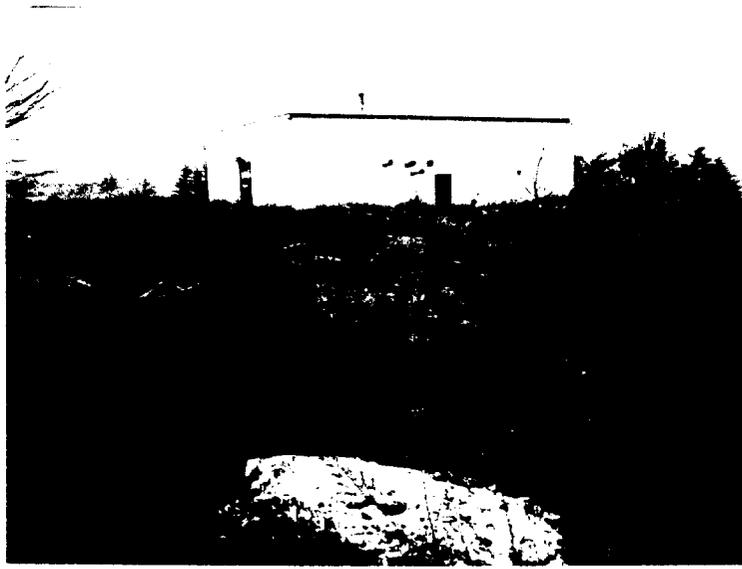


Fig. 1. Location of the former Sylvania-Corning Nuclear Corporation Metallurgical Laboratory in Bayside, New York.



Boiler house



Garage

Fig. 2. Photographs showing boiler house and garage viewed from center of property.



North (Throgs Neck Bridge)



Northeast (Cross Island Parkway)

Fig. 3. North and northeast views from center of property.



North end



Possible site of process building

Fig. 4. Photographs showing north end of property and probable site of process building near center of property.

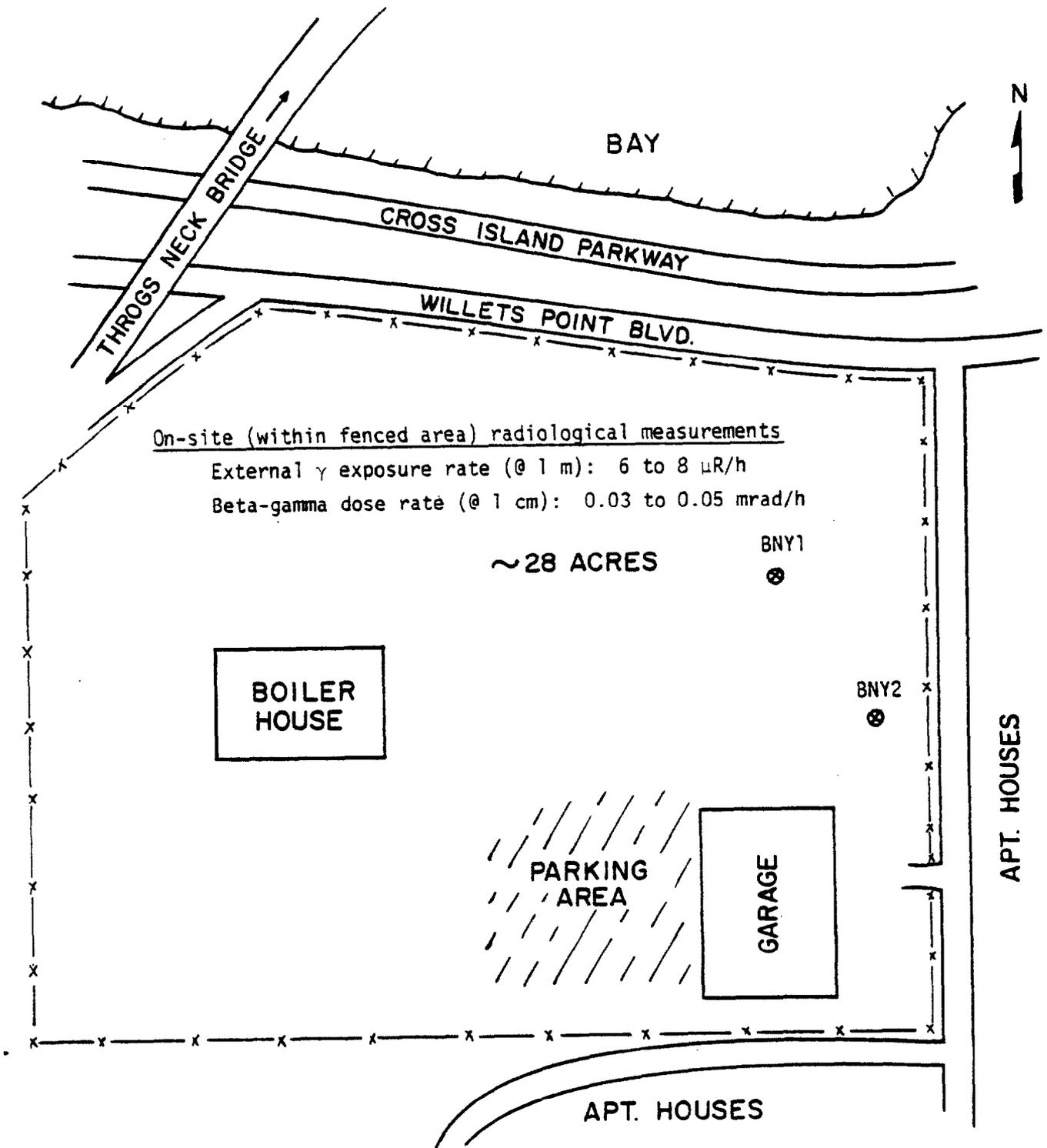


Fig. 5. Facilities surveyed at the former Sylvania-Corning Nuclear Corporation Metallurgical Laboratory in Bayside, New York. Location of soil samples are identified on diagram.

Table 1. Concentrations of  $^{238}\text{U}$ ,  $^{226}\text{Ra}$ , and  $^{232}\text{Th}$  in soil samples obtained from the former Sylvania-Corning Nuclear Corporation site, New York

Sample <sup>a</sup>	Radionuclide concentrations (pCi/g) <sup>b</sup>		
	$^{238}\text{U}$	$^{226}\text{Ra}$	$^{232}\text{Th}$
BNY1	0.99	0.84 (0.07)	0.92 (0.08)
BNY2	1.1	1.1 (0.05)	1.1 (0.06)

<sup>a</sup>Locations of samples are shown in Fig. 5.

<sup>b</sup>Indicated errors associated with these concentrations are two sigma (95% confidence).

Decontamination was verified by the New York Department of Labor and AEC's Health and Safety Laboratory.

However, because no records were available at the time, Department of Energy (DOE) Oak Ridge Operations Office and Oak Ridge National Laboratory personnel performed a screening survey on November 29, 1977, to determine its radiological condition. During the site visit and exploratory survey, which included direct measurements and collection of soil samples, no radioactivity above background was detected.

During construction of the condominiums, the DOE Environmental Measurements Laboratory and the New York City Department of Health monitored the subsurface conditions at the site. Gamma ray surveys and soil sample analyses revealed no contamination above background levels.

Based on a review of historical records and radiological survey results, DOE determined that no further action is necessary at the Bayside site. The site has been eliminated from consideration for inclusion in the Formerly Utilized Sites Remedial Action Program. A final elimination report was completed in November 1985.

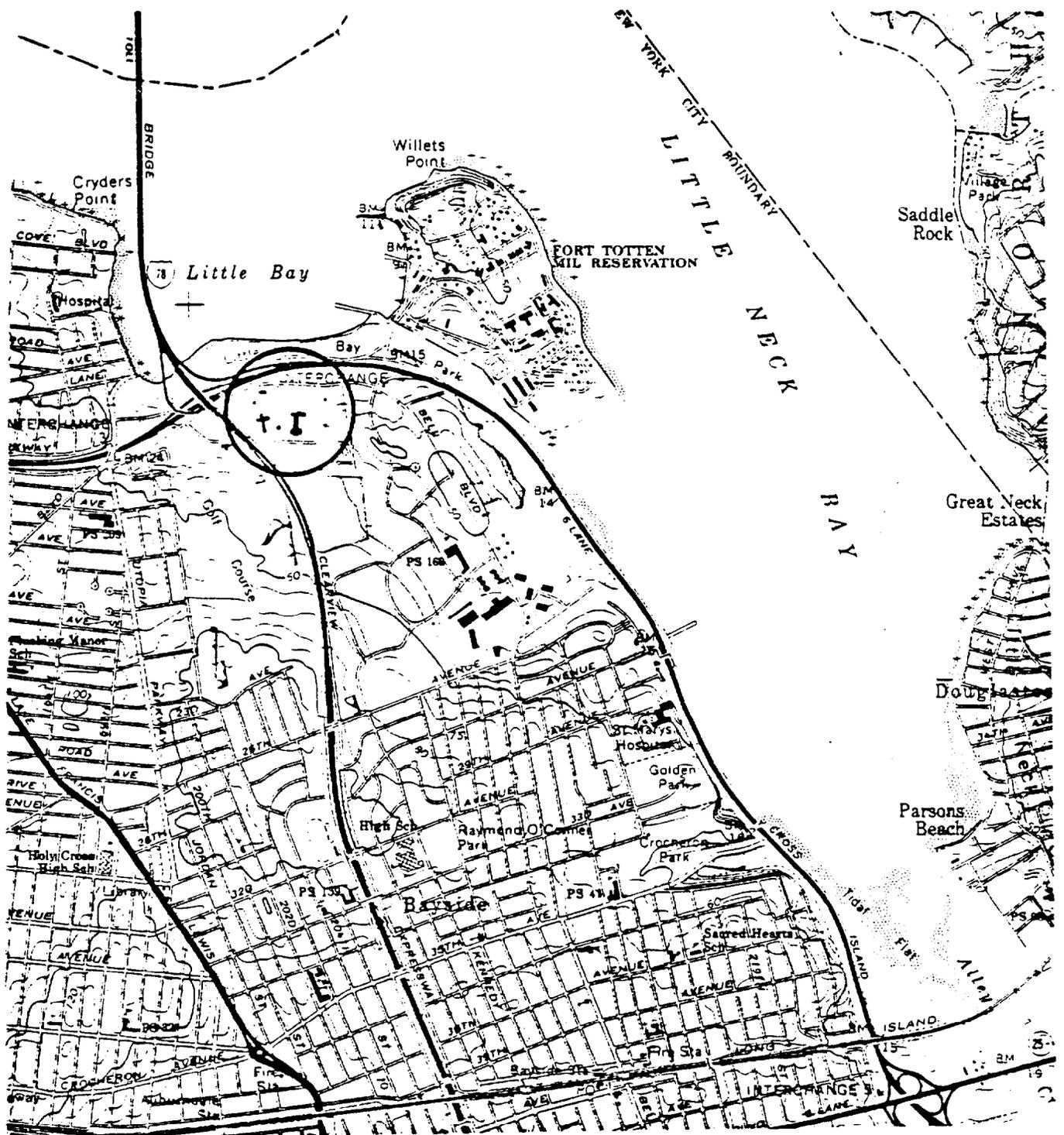


Figure 1. Location of the Former Sylvania-Corning Nuclear Corporation Metallurgical Laboratory in Bayside, New York

THE FORMER SYLVANIA-CORNING NUCLEAR CORPORATION, INC.  
METALLURGICAL LABORATORY  
Bayside, New York

Site Function

The Metallurgical Laboratory of Sylvania-Corning was used from the late 1940s to the early 1960s under Atomic Energy Commission (AEC) contracts for research and development with radioactive materials, principally uranium and thorium. The uranium work included carbon reduction of uranium oxide; development of pelletized (ceramic), wire, porous, and hollow fuel elements; powder metallurgy, including studies on nonpyrophoric uranium powder, hydrostatic pressing, pressing procedures, ore melting, preforms, and sinter welding; continuous reduction of uranium hydride; UO<sub>2</sub> wafer and flat plate production; uranium pipe cutting; investigation of dimensional stability; and nonaqueous separation. Thorium projects included powder metallurgy, reduction, and canning of slugs. The work was sponsored by the AEC reactor development group as well as by Oak Ridge and Savannah River Operations Offices, Lockland Area Office, Argonne National Laboratory, and University of California Radiation Laboratory. Two contracts have been identified: AT(30-1)-1293 and AT-24(AT(30-1)-Gen-366). The facility was also licensed by AEC to process and use uranium. The regulatory responsibility for the license was transferred from AEC to the New York State Department of Labor in 1962. During this period, occupancy of the building gradually shifted to General Telephone and Electronics (GTE) Laboratories, which also occupied other buildings at the site. GTE subsequently moved its facilities to Waltham, Massachusetts.

Site Description

The site is located at 208 to 220 Willetts Point Boulevard, Bayside, New York (Figure 1). None of the original buildings remain. Condominiums have been built on the property. Construction is nearly complete, and approximately 80 percent of the units are occupied.

Owner History

The site was owned by Sylvania Electric Company, Atomic Energy Division (later Sylvania-Corning Nuclear Corporation, Inc.), and subsequently by GTE. It is now privately owned by over 600 individuals.

Radiological History and Status

New York State terminated the GTE license at this site in 1973 following survey and decontamination by Teledyne Isotopes.

2 Enclosures

cc:

J. Spath, NY State ERDA

R. Borri, NY City Health Dept.

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